performed with a filter selected from the group consisting of Chelsea, Waltonhodgkinson-Hanneman, frequency, and polarization filters.

32.(New) The method set forth in claim 31, wherein the step of placing a gemstone on the platform comprises the steps of:

directing a laser light beam along a processing axis through the platform and, aligning the gemstone with said laser light beam..

Cont. B1

33.(New) Apparatus for grading and identification of a gemstone comprising:

a housing;

a platform mounted in said housing for supporting a gemstone;

lighting means disposed within said housing for illuminating the gemstone supported by said platform;

an electronic imaging device mounted in said housing and adapted for viewing the gemstone on said platform from each of a plurality of different viewing angles and for generating electronic image signals corresponding to a physical characteristic of the gemstone;

an electronic data processor operatively connected to said lighting means and said electronic imaging device, said electronic data processor being programmed with an instruction set for controlling said lighting means and said electronic imaging device, and for receiving and storing the electronic image signals; and

data entry means connected to said electronic data processor for entering into said data processor data containing information identifying a physical characteristic of a gemstone.

34.(New) A system for generating, maintaining, and retrieving characterizing information about gemstones comprising:

an electronic camera for viewing a gemstone and being adapted for generating electronic image signals corresponding to a physical characteristic of the gemstone; and

a processing apparatus including an electronic data processor and a data storage device, wherein the electronic data processor is operatively connected to said electronic

camera for receiving the electronic image signals and is programmed with an instruction set for controlling said electronic camera and for processing the electronic signals to provide a data file containing information identifying a physical characteristic of the viewed gemstone, wherein the data storage device contains a database of information identifying a plurality of known gemstones and said electronic data processor is programmed for retrieving information from said data storage device identifying a known gemstone by a physical characteristic thereof.

Cont. B1

35.(New) A system as set forth in Claim 34 wherein said electronic data processor is programmed for comparing the identifying information of the viewed gemstone provided by said electronic data processor to the identifying information of the known gemstone retrieved from said data storage device, whereby the gemstone viewed by the electronic camera can be accurately identified.

36.(New) Apparatus for grading and identification of a gemstone comprising:

a housing;

a platform mounted in said housing for supporting a gemstone;

first means disposed within said housing for illuminating a gemstone supported by said platform;

means for displacing said platform in said housing;

means for holding a gemstone in place on said platform during said displacing of said platform;

an electronic camera mounted in said housing for viewing a gemstone on said platform, said camera being adapted for generating electronic image signals corresponding to a physical characteristic of the gemstone; and

an electronic data processor operatively connected to said displacing means and said electronic camera, said electronic data processor being programmed with an instruction set for controlling said displacing means and said electronic camera, and for receiving and storing the electronic image signals.

37.(New) The apparatus of claim 36, wherein said means for displacing said